R E P O R T R E S U M E S

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AN EVALUATION OF SUPERVISED CORRESPONDENCE STUDY AS A MEANS OF HELPING RELIEVE THE TEACHER SHORTAGE.

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THIS STUDY WAS UNDERTAKEN TO OBTAIN EVIDENCE REGARDING THE EFFECTIVENESS OF SUPERVISED CORRESPONDENCE STUDY IN HIGH SCHOOLS WHICH COULD BE USED AS A POSSIBLE SOLUTION TO THE CURRENT SHORTAGE OF TEACHERS. DATA WERE OBTAINED BY MEANS OF A QUESTIONNAIRE TO STUDENTS AND PRINCIPALS CONCERNING SATISFACTORY METHODS OF INSTRUCTION, ADMINISTRATIVE PROBLEMS AND SOLUTIONS, STUDENT VIEWPOINTS, AND SUCCESS OF COLLEGE CORRESPONDENCE COURSES TAKEN ON THE HIGH SCHOOL LEVEL. THE RESPONSES OF BOTH STUDENTS AND PRINCIPALS SHOW THAT, IF IT WERE NOT FOR THESE CORRESPONDENCE STUDIES, STUDENTS IN MANY INSTANCES WOULD BE DENIED THE OPPORTUNITY TO PURSUE NEEDED COURSES IN MANY SUBJECT-MATTER AREAS. ACHIEVEMENT RESULTING FROM THESE COURSES IS GREATER THAN FROM RESIDENT INSTRUCTION. THIS METHOD OF INSTRUCTION HAS GREATER POTENTIALITY FOR INCREASING FLEXIBILITY OF CURRICULUM, AND WILL MAKE A SUBSTANTIAL CONTRIBUTION TO THE HIGH SCHOOL PROGRAM DURING THE TEACHER SHORTAGE. LACK OF ADMINISTRATION, SUPERVISION, TEACHER INTEREST, AND CLOSER LIAISON BETWEEN THE STAFFS OF CORRESPONDING CENTERS AND LOCAL SCHOOLS IS THE OBJECTION. MORE STUDY [illegible] RECOMMENDED. (GC)

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I. INTRODUCTION

DEFINITION OF THE STUDY

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AN EVALUATION OF SUPERVISED CORRESPONDENCE STUDY

AS A MEANS OF HELPING RELIEVE THE TEACHER SHORTAGE

Report of A Study

Conducted by

School of Education
The George Washington University
Washington, D. C.

The research reported herein was performed pursuant to a contract with the U. S. Office of Education, Department of Health, Education, and Welfare.

PREFACE

This study was undertaken primarily to obtain additional evidence regarding the effectiveness of supervised correspondence study in high school, which could be used in the further consideration of solutions to the current problem of teacher shortage. The research was conducted by the School of Education of The George Washington University. The funds to support this investigation were provided by the U. S. Office of Education, Department of Health, Education, and Welfare, under the provisions of Public Law 531, 2d Session, 83d Congress.

This research project was conducted under the direction of Blake S. Root, Assistant Dean, School of Education. Zena Valenziano, a graduate student in the School of Education, served as Research Associate; and Nina M. Booth, as Clerk-Typist. The following persons, who contributed their wide experience in methods of research or in the area of supervised correspondence study in high school, served as consultants:

Knute O. Broady, Director, University Extension Division, The University of Nebraska

James Harold Fox, Dean, School of Education, The George Washington University

Walter H. Gaumnitz, Head, Rural Research and Statistics Unit, U. S. Office of Education, Department of Health, Education, and Welfare

Homer Kempfer, Director, National Home Study Council

Chester H. McCall, Assistant Professor of Statistics, The George Washington University

The services of the clerical staff of the School of Education and the Statistics Department of this University were used extensively in connection with this study. The library facilities of the U. S. Office of Education and The George Washington University were also used.

Table of Contents

	Page
PREFACE	ii
LIST OF TABLES	iv
I. INTRODUCTION	1
Purpose	1
Hypotheses Tested	1
Scope	2
Definition of Terms	2
Means of Obtaining Data	2
Significance	3
II. PROCEDURE	4
Populations and Sample Sizes	4
Questionnaires	6
Analysis of Data	8
III. FINDINGS	12
Why Supervised Correspondence Study is used	12
Proportion of Supervised Correspondence Study Courses Completed	14
Reasons for Non-completion of Supervised Correspondence Study Courses	17
Effectiveness of Supervised Correspondence Study Compared with Classroom Instruction	20
Advantages and Disadvantages of Supervised Correspondence Study	23
Extent to which Supervised Correspondence Study helps to prepare Students for Subsequent Study in the same Subject Field	26
How the Effectiveness of Supervised Correspondence Study can be increased	28
Attitude of Students toward Supervised Correspondence Study	31
Summary of Findings	31
IV. INTERPRETATION OF FINDINGS	36
Conclusions	36
Recommendations	38
Further Research Needed	40
Concluding Statement	41
APPENDIXES	
I. Questionnaires	42
II. Covering Letters	57

List of Tables

Table		Page
1.	Responses from students which did not provide data for analysis	7
2.	Responses from principals which did not provide data for analysis	8
3.	Chi-square analysis of students' opinions regarding how supervised correspondence study compares with regular classroom instruction in the amount learned in courses studied in the same subject field (Item 7, Questionnaire Form A)	9
4.	Chi-square analysis of students' opinions regarding how supervised correspondence study compares in general with regular classroom instruction in the amount learned (Item 8, Questionnaire Form A)	10
5.	Results of analysis of the principals' responses regarding students' attitude, toward supervised correspondence study as a method of instruction (Item 8, Questionnaire Form B)	10
6.	Chi-square analysis of principals' opinions regarding the achievement resulting from supervised correspondence study as compared with that from regular classroom instruction (Item 11, Questionnaire Form B)	11
7.	Reasons for enrolling in supervised correspondence study courses expressed by students	12
8.	Reasons for using supervised correspondence study expressed by the principals	13
9.	Supervised correspondence study courses completed by students sampled as reported by the students themselves	14
10.	Supervised correspondence study courses completed and dropped, with percentages completed, by subject field and sex of students	15
11.	Supervised correspondence study courses completed in the high schools sampled, by years, as reported by the principals	16
12.	Reasons for non-completion of supervised correspondence study courses expressed by students sampled	18
13.	Reasons for non-completion of supervised correspondence courses given by principals	19

Table		Page
14.	Comparison of supervised correspondence study with regular classroom instruction with respect to courses studied in the same subject field	20
15.	Comparison by students of supervised correspondence study in general with regular classroom instruction	21
16.	Opinions of principals regarding the comparison of supervised correspondence study and regular classroom instruction with respect to achievement	22
17.	Advantages of supervised correspondence study noted by students	23
18.	Disadvantages of supervised correspondence study noted by student-respondents	24
19.	Advantages of supervised correspondence study noted by students as reported by principals	25
20.	Disadvantages of supervised correspondence study expressed by students as reported by principals	25
21.	Extent to which supervised correspondence study courses helped to prepare students for later courses by classroom instruction, by institutions and subject fields	27
22.	Ways in which supervised correspondence study can be improved by instructors and supervisors, as suggested by student-respondents	28
23.	Ways in which supervised correspondence study can be improved by the correspondence centers and the local schools, as suggested by principals	30

I. INTRODUCTION

DEFINITION OF THE STUDY

Purpose

This study was undertaken for the purpose of investigating the effectiveness of supervised correspondence study in high school from the viewpoint of high-school students and administrators, who have employed this method of instruction. Specifically, the investigation was concerned with answers to the following questions:

1. Why supervised correspondence is being used.
2. What proportion of supervised correspondence study courses are completed.
3. What are the major reasons for non-completion of these courses.
4. How the effectiveness of supervised correspondence study compares with that of regular classroom instruction.
5. What are the advantages and disadvantages of this method of instruction.
6. To what extent do courses studied by supervised correspondence study help to prepare students for courses studied subsequently in the same subject field.
7. How the effectiveness of supervised correspondence study can be increased.

Hypotheses Tested

The hypotheses tested are:

1. In the opinion of principals of high schools which have used supervised correspondence study, students generally find this method of instruction a satisfactory means of studying high-school subjects.
2. Students who have used supervised correspondence study believe that the method compares favorable with regular classroom instruction when achievement is a consideration.

3. Principals of high schools which have utilized supervised correspondence study feel that this method of instruction compares favorably with regular classroom instruction in regard to achievement.

Scope

This is an evaluation of the effectiveness of supervised correspondence study in high school by students, who have been enrolled in supervised correspondence study courses at the high-school level, and by principals of high schools which have used this method of instruction.

Definition of Terms

Supervised Correspondence Study.--A method of instruction conducted by means of correspondence under the supervision of a teacher, principal, or some other person who acts as liaison between the student and the correspondence center.

Supervisor.--A person designated by the local school administrator to assist students in the pursuit of supervised correspondence study courses.

Instructor.--A person located at a correspondence center who provides the student with study materials and who evaluates assignments and examinations completed by the student.

Means of Obtaining Data

The data were obtained by means of two questionnaires which were mailed to students and principals, whose names were obtained from correspondence centers. The names and addresses of the students included in the study were obtained from six public correspondence centers; namely, university extension divisions and state correspondence schools, which, with the exception of one, are members of the National University Extension Association. These institutions and two private correspondence schools, the latter of which are members of the National Home Study Council, provided names of the high schools using their services.

Significance

A great many high schools are finding it increasingly difficult to obtain qualified teachers, especially in the areas of science and mathematics. In many of our high schools, students are being taught courses in sciences, mathematics, and other subject-matter fields by teachers who have not been prepared to teach in these fields. Several hundred high schools have attempted to solve the problem of teacher shortage by using correspondence courses, which have been prepared by qualified and experienced teachers and which are supervised by local teachers.

Supervised correspondence study has appeared among the various measures discussed by persons who have directed their attention toward possible solutions to the teacher-shortage problem. It is one of the means considered which has progressed beyond early experimental states. Materials and procedures, which have been refined, as a result of experience in and investigation into this method of instruction, are available now for use by high schools, that are faced with the problem of limited curriculum offerings resulting from the shortage of teachers and other factors. These materials and procedures have been used for three decades as a means of enriching the curriculum of both small and large high schools and to take care of situations resulting from schedule conflicts, failures, late entrances and other factors which make regular classroom instruction not feasible. Supervised correspondence study has been employed to develop abilities and interests of thousands of students who cannot be provided for by the traditional method of instruction.

Despite the increase in the numbers of students and high schools using supervised correspondence study during the past two decades, there has been relatively little investigation into the effectiveness of this method of instruction. This study will add to the research evidence regarding the effectiveness of supervised correspondence study as a method of instruction, which could be considered by those persons who are concerned with finding solutions to the problem of teacher shortage.

II. PROCEDURE

Populations and Sample Sizes

In the process of determining the necessary sample sizes to make inferences with regard to responses analyzed in a dichotomous fashion, the following were considered:

1. The size of the populations
2. The values of the population proportions
3. The tolerance or error allowable
4. The degree of confidence desired for the inferences made.

First, an allowable error of plus or minus .05 and a level of significance or Type I error of .05 (the probability of rejecting the hypothesis when it is actually true) were selected.

In attempting to ascertain the size of the populations it was found that sources of information regarding numbers of courses, enrollees, and high schools do not include data from all types of agencies which provide high-school courses, which are used in supervised correspondence study. Available figures regarding enrollments in correspondence courses do not make a distinction between courses which are supervised and those which are not. Furthermore, as revealed when the questionnaires were returned, records of students of normal high-school ages and those in adult education programs, pursuing correspondence courses at the high-school level, are not maintained separately by all correspondence centers. Also, included in the records, are names of students and high schools employing correspondence study under varying degrees of supervision, ranging from supervision of only the final examination to that which includes the study and preparation of assignments.

The determination of the true size of the populations, involved in supervised correspondence study in the precise sense of the definitions used in this study, would require an exorbitant expenditure of funds and time and the cooperation of all the diverse agencies which provide high-school correspondence courses. In view of this, it was decided to assume the populations to be infinite and obtain estimates of the population proportions of given responses from sample proportions obtained from a preliminary sample or from results of previous experiments.

Based upon an allowable error of plus or minus .05 and a level of significance or Type I error of .05, assuming the populations to be infinite and the population proportions to be 50 per cent of the actual totals, the sample sizes required for all populations considered in this study is 400. For a finite population and population proportions different from 50 per cent, the sample size required is less than 400. For example, the preliminary sample indicates that the proportion of supervised correspondence study courses completed is approximately 80 per cent, which confirms results found by other studies. On the basis of this estimate of the population proportion, 246 is the sample size required to make valid inferences regarding the proportion of supervised correspondence study courses completed by the total population of students during the period of this study. The formula used to derive this value is:

$$n = \frac{\chi^2 \pi (1 - \pi)}{E^2}$$

[E=Allowable error (.05); π = Percentage of population that completed correspondence courses attempted; and $\chi^2_{.05}$ (1 degree of freedom) = 3.841 (Table chi square)]

This procedure was used to determine the sample sizes required for all responses relevant to the questions raised and the hypotheses tested. With one or two exceptions, the number of responses obtained was more than adequate.

The correspondence centers which agreed to cooperate in the study were asked to select samples of the student and high-school populations in the following manner:

1. Beginning with the forty-second name, every fiftieth high-school student who was enrolled in a high-school supervised correspondence study course, during the school years 1954-55, 1955-56, and 1956-57, was to be selected.

2. Beginning with the third name, every sixth high school which employed supervised correspondence study, during the same period, was to be selected.

When duplicate names were deleted, the samples of subjects provided by the centers were comprised of 846 students and 897 high schools.

Questionnaires

The two questionnaires used to elicit data from the subjects incorporated suggestions made by the consultants. In order to test the effectiveness of the questionnaires and to obtain sample proportions, which could be used as estimates of population proportions, copies of both were sent to twenty-four principals of high schools, whose names were selected randomly from a list of the total number of high schools which used high-school correspondence courses of a correspondence center during 1956-57. These principals were requested to distribute copies of Questionnaire Form A (APPENDIX I) to some of their students, who enrolled in supervised correspondence study courses during the past three years. The preliminary sampling yielded twenty-nine (29) responses from students and nine (9) from principals. No changes were made to the Questionnaires as a result of this preliminary trial.

Questionnaire Form A was mailed to the 846 students, whose names and addresses were provided by six public correspondence centers. This mailing provided 237 useable responses. After a follow-up letter, with questionnaire enclosed, was sent to 510 non-respondents, 69 more useable questionnaires were received, making a total of 306 which provided data for analysis and 540 which did not. Those questionnaires which did not yield data for analysis consisted of:

1. Ninety-two (92) which were not received by the addressees. (The questionnaires were returned by the postmaster or by a member of the addressee's family.)

2. One hundred and eighteen (118) which were returned by addressees but were not used. (Table 1 indicates reasons for rejection.)

3. Three hundred and thirty (330) which were not returned.

Table 1.-Responses from students which did not provide data for analysis

Reasons	Number of Responses
1. Not supervised	17
2. Enrolled in an elementary school at the time	2
3. Enrolled in the course after leaving high school	55
4. Currently enrolled in the only correspondence course taken	17
5. Response received too late for data to be used	6
6. Questionnaire returned unanswered	21
Total	118

Questionnaire Form B (APPENDIX I) was mailed to 897 principals of high schools. Three hundred and forty (340) useable returns were received. The 557 Questionnaires which did not provide data for the analysis consisted of:

1. Seven (7) which were returned by the postmaster and eleven (11), by principals of elementary schools, for the reason that there was no high school in the area addressed.

2. One hundred and twenty-two (122) which were returned but were not used, (Table 2 indicates reasons.)

3. Four hundred and seventeen (417) which were not returned.

Table 2.--Responses from principals which did not provide data for analysis

Reasons	Number of Responses
1. Supervised correspondence study has not been used.	80
2. Supervised correspondence study was instituted for the first time this year.	8
3. The method of instruction is used only in the adult education program.	3
4. Returned unanswered or partially answered because of limited or no experience in the admininstration of such programs.	15
5. Response received too late for data to be used.	12
6. Little supervision provided	4
Total	122

Analysis of Data

The statistical procedure used to analyze the data is the method of chi square. Chi square is a statistical technique which is employed to test whether the difference between actual and expected frequencies is a result of chance sampling variation or whether the difference is more than that attributable to chance. The computed chi square, in each case, was obtained by the use of the formula:

$$(\text{chi square } \chi^2 = \sum \frac{(\text{Observed Frequency minus Expected Frequency})^2}{\text{Expected Frequency}}$$

This technique was applied to test the null hypothesis or the hypothesis of "no difference" in opinions expressed by the students who responded to Items 7 and 8 of Questionnaire Form A and by principals, to Items 8 and 11 of Questionnaire Form B. In each case, the responses were divided into dichotomous categories.

In Item 7, applicable only to those respondents who have studied courses in the same subject field by supervised correspondence study and by regular classroom instruction, the students were requested to indicate one of five responses which compared the amount they learned by correspondence with that learne by classroom instruction. The given responses, much more, more, no difference, less, and much less, were set up in the two categories shown in Table 3, which giv the results of the analysis of the responses obtained.

Table 3.--Chi-square analysis of students' opinions regarding how supervised correspondence study compares with regular classroom instruction in the amount learned in courses studied in the same subject field (Item 7, Questionnaire Form A)

	Observed Frequency (F_o)	Expected Frequency (F_e)	(F_o-F_e)	$(F_o-F_e)^2$	$\frac{(F_o-F_e)^2}{F_e}$	Chi Square Obtained	Chi Square 5% *
Learned as much or more by correspondence	140	90.5	49.5	2450.25	27.1	54.2	3.841
Learned less by correspondence	41	90.5	-49.5	2450.25	27.1		
Total	181	181.0	0		54.2		

*Level of Significance

In Item 8, the students were asked to indicate one of three responses comparing in general the amount they learned by supervised correspondence study with regular classroom instruction. The three responses (more by correspondence, as much by correspondence, and more by classroom instruction) were tabulated under the two categories shown in Table 4.

Table 4.--Chi-Square analysis of students' opinions regarding how supervised correspondence study compares in general with regular classroom instruction in the amount learned. (Item 8, Questionnaire Form A)

	Observed Frequency (F_o)	Expected Frequency (F_e)	(F_o- F_e)	(F_o- F_e)^2	$\frac{(F_o-F_e)^2}{F_e}$	Chi Square Obtained	Chi Square 5%
Learn as much or more by correspondence	201	137.5	63.5	4032.25	29.3	58.6	3.841
Learn more by classroom instruction	74	137.5	-63.5	4032.25	29.3		
Total	275	275.0	0		58.6		

The same procedure was followed in the analyses of responses obtained by Items 8 and 11 in the questionnaire sent to the principals. In Item 8, the principals were asked to indicate whether students generally find supervised correspondence study highly satisfactory, satisfactory, or unsatisfactory as a method of instruction. Item 11 sought the opinion of the principals regarding whether supervised correspondence study results in more, the same, or less achievement when compared with regular classroom instruction. The results of the analyses of the responses obtained from these items are given in Tables 5 and 6

Table 5.--Results of anlaysis of the principals' responses regarding students' attitude toward supervised correspondence study as a method of instruction (Item 8, Questionnaire Form B)

	Observed Frequency (F_o)	Expected Frequency (F_e)	(F_o-F_e)	(F_o-F_e)^2	$\frac{(F_o-F_e)^2}{F_e}$	Chi Square Obtained	Chi Square 5%
Satisfactory	252	164.5	87.5	7656.25	46.5	93	3.841
Unsatisfactory	77	164.5	-87.5	7656.25	46.5		
Total	329	329.0	0		93.0		

Table 6.--Chi-Square analysis of principals' opinions regarding the achievement resulting from supervised correspondence study as compared with that from regular classroom instruction (Item 1, Questionnaire Form B)

	Observed Frequency (F_o)	Expected Frequency (F_e)	($F_o - F_e$)	$(F_o - F_e)^2$	$\frac{(F_o - F_e)^2}{F_e}$	Chi Square Obtained	Chi Square 5%
Same or More Achievement	134	164.5	-30.5	930.25	5.66	11.32	3.841
Less Achievement	195	164.5	30.5	930.25	5.66		
Total	329	329.0	0		11.32		

In addition to computing the percentage of completed supervised correspondence study courses reported by the students and the principals, estimates of the proportion of courses completed by the total populations were obtained. The confidence limits, $(p_1 - p_2)$, were obrained by using the following formula:

$$p_1 = \frac{2X + \chi^2_{.05} - \sqrt{(2X + \chi^2_{.05})^2 - 4(X)^2(1 + \chi^2_{.05}/N)}}{2(N + \chi^2_{.05})}$$

$$p_2 \quad \frac{2X + \chi^2_{.05} + \sqrt{(2X + \chi^2_{.05} - 4(X)^2(1 + \chi^2_{.05}/N)}}{2(N + \chi^2_{.05})}$$

(X = Number of courses completed; $\chi^2_{.05}$ (1 degree of freedom) = 3.841; and N = Total number of courses for which students were enrolled.)

No additional statistical analysis was used, except that the data were tabulated and variations noted.

III. FINDINGS

The data obtained are presented in relation to major questions arising out of the problem. Where pertinent, comments concerning significance of the data are made.

Why Supervised Correspondence Study is used

The 306 questionnaires received from the students yielded 402 responses to the question regarding reasons for enrolling in supervised correspondence study courses. Table 7 shows the responses given.

Table 7.--Reasons for enrolling in supervised correspondence study courses expressed by students.

Reason	Number of Times Indicated	Percentage of Students
1. Could not take the course by classroom instruction:		
a. When it was offered	77	25
b. Because it was not offered at all	36	12
2. Too few students requested the course	63	21
3. Qualified teacher was not available	50	16
4. To make up credit deficiencies because of failure or other reasons	52	17
5. Unable to attend regular classes because of:		
a. Illness or physical disability	19	6
b. Distance or work	15	5
c. Marriage or pregnancy	9	3
6. To accelerate program	23	8
7. To meet individual interest or need	21	7
8. Because of late entrance or irregular attendance	20	7
9. To fulfill college-entrance requirements	13	4
10. Miscellaneous	4	1
Total	402	

The reasons given most often were related to the unavailability of the courses at any time or when desired or needed by students. Contributing to the fact that courses were not available by regular classroom instruction were the lack of qualified teachers and too few requests by students to make a regular class feasible. These responses reveal that supervised correspondence study is

used to take care of problems resulting from schedule conflicts; limited curriculum offerings; credit deficiencies resulting from failure or other reasons; and individual differences in interests, ability, and needs.

Data in this regard were obtained also from the 340 questionnaires received from the principals. The responses received are given in Table 8.

Table 8.--Reasons for using supervised correspondence study expressed by the principals

Reason	Number of Times Indicated	Percentage of Principals
1. Course was not offered by classroom instruction:		
a. Because qualified teacher was not available	100	29
b. Too few students requested the course	184	54
c. On alternate years	85	25
d. At any time	14	4
e. No explanation given	14	4
2. To make up deficient credit because of:		
a. Failure	76	22
b. Drop-out or irregular attendance	26	8
c. Transfer from another school	4	1
d. Reason not given	16	5
3. To take care of schedule conflicts	120	35
4. To provide for students entering late	42	12
5. Students could not attend regular classes because of:		
a. Marriage or pregnancy	15	4
b. Distance	2	.6
c. Ilness or physical disability	9	3
6. To provide for acceleration and enrichment	14	4
7. To provide for special interest	10	3
8. Miscellaneous	6	2
Total	737	

The principals were requested to double-check the chief reason. Not all of the respondents did so. Forty-four (44) indicated that the chief reason for using supervised correspondence study was that the number of students requesting certain courses was too small to form a regular class. The lack of qualified tachers and schedule conflicts were noted as chief reasons twenty (20) times each.

The principals also indicated that the unavailability of courses influenced the use of supervised correspondence study courses oftener than any other factor. Twice as many principals as students noted that the lack of qualified teachers was one reasons that courses were not offered by regular classroom instruction. More than twice as many principals as students indicated that too few students requested the courses. No doubt, some of the students were not aware of the reasons why courses were not offered and did not check some of the reasons which actually applied. The responses given by principals confirm the information obtained from students regarding the variety of uses to which supervised correspondence study is employed to meet the needs and interests of students which cannot be met by regular classroom instruction.

Proportion of Supervised Correspondence Study Courses Completed

Data regarding the subject field, as well as the number, of courses completed or dropped were obtained from the students. Tables 9 and 10 contain the responses received.

Table 9.--Supervised correspondence study courses completed by students sampled, as reported by the students themselves

	Male	Female	All
Number of courses for which students were enrolled	291	373	664
Number of courses completed	247	320	567
Percentage completed	85	86	85

The percentages of completion indicate that the proportion of supervised correspondence study courses completed has increased since the 1930's and 1940's, when the completion rate was found to be between 70 per cent and 75 per cent.

The percentages shown in the table above substantiate the assertion made in 1952 by Childs that "the percentage of completions is being substantially increased."[1]

On the basis of the completion rates provided by the samples the 95-per-cent confidence limits for the proportion of completions in the populations were found to be: For male students, .80 - .89; for female students, ;82 - .89; and for all students, .83 - .88. These limits were computed by use of the formulae given on page 11.

Table 10 gives a breakdown of the number and percentage of courses completed by subject field and sex of students.

Table 10.--Supervised correspondence study courses completed and dropped, with percentages completed, by subject field and sex of students

Subject Field	Male Completed			Female Completed			All Completed		
	Yes	No	Percentage	Yes	No	Percentage	Yes	No	Percentage
English	40	3	93	60	10	86	100	13	88
Social Studies	45	6	88	70	9	89	115	15	88
Science	28	3	90	20	5	80	48	8	86
Mathematics	47	19	71	23	4	85	70	23	75
Foreign Language	19	2	90	15	7	68	34	9	79
Trade and Industrial Education--Vocational	33	5	87	0	0	--	33	5	87
Business Education	15	4	79	57	13	81	72	17	81
Home Economics	1	0	100	61	3	95	62	3	95
Agriculture	14	2	88	0	0	--	14	2	88
Health, Safety, and Physical Education	3	0	100	4	0	100	7	0	100
Music	0	0	--	1	1	50	1	1	50
Art	1	0	100	8	1	89	9	1	90
Others	1	0	100	1	0	100	2	0	100
Total	247	44	85	320	53	86	567	97	85

1. Gayle B. Childs, "A. Research Concerning Supervised Correspondence Study," Supervised Correspondence Instruction in the Secondary School, The Bulletin of the National Association of Secondary-School Principals, Vol. 36, No. 190 (December, 1952), p. 11.

For male and female students combined, the subject fields in which the smaller percentages of courses were completed are music, mathematics, foreign language, and business education. For all other subject fields listed above, the completion rates fall within or above the confidence limits obtained for the percentage of courses completed by the population, .83 - .88.

Data regarding courses completed by the students in the high schools sampled were obtained from the principals. These data are shown in Table 11.

Table 11.--Supervised correspondence study courses completed in the high schools sampled, by years, as reported by the principals.

	1954-55	1955-56	1956-57	Combined
Number of courses for which students were enrolled	1802	1577	1773	5152
Number of courses completed	1592	1252	1314	4158
Percentage completed	88	79	74	81

The data given above show a decrease in the completion rate of 9 per cent from 1954-55 to 1955-56 and 14 per cent from 1954-55 to 1956-57. For the three years combined, the completion rate is 4 per cent less than that found for the male and female students combined. On the basis of the completion rates revealed by the responses from the principals, the 95-per-cent confidence limits of the proportion of completions in the total population for each of the years and the three years combined are:

Period	Limits
1954-55	.87 - .90
1955-56	.77 - .81
1956-57	.72 - .76
Combined	.80 - .82

Except for the year 1954-55, the confidence limits obtained are below those obtained for the male and female student-respondents combined. Reluctance on the part of students to reveal that they had withdrawn from courses before

completing them might have contributed to the difference. Also, it is possible that the students who complete correspondence courses are more likely to return questionnaires on the subject. Since the sample sizes obtained from the principals are proportionately larger than those of the students, a higher degree of confidence might be placed in the results obtained from the former. Since the principals had access to the records of the schools, it is likely that a substantial proportion of figures obtained from the principals was exact.

Reasons for Non-completion of Supervised Correspondence Study Courses

The preceding section dealt with the proportion of courses completed. From the student responses, it was learned that seventy-seven (77) students withdrew from correspondence courses. Ninty-seven (97) out of the 664 courses for which the students were enrolled were not completed. During the three years reported on by the principals, 994 of the 5,152 courses enrolled in by their students were not completed. The reasons for non-completion of courses which were given by the students reporting are shown below.

Table 12.--Reasons for non-completion of supervised correspondence study courses expressed by students sampled

Reason	Number of Times Indicated	Percentage of Students
1. Course too difficult:		
a. In general	8	10
b. When studying alone	34	44
2. Too much time required	35	45
3. No enough help from the:		
a. Supervisor	14	18
b. Instructor	3	4
4. Dissatisfaction with:		
a. Method	3	4
b. Content of course	2	3
c. Handling of papers	12	16
5. Course was no longer needed because student:		
a. Transferred to another school	4	6
b. Learned course was not required	6	8
c. Learned course would be offered later	1	1
6. Had to reduce number of courses being taken	7	9
7. Too much writing required	6	8
8. Counselor or teacher disapproved	6	8
9. Lack of initiative and interest on part of the student	5	6
10. Because of illness of student or supervisor	4	5
11. Miscellaneous	8	10
Total	158	--

Some of the reasons for non-completion of courses shown above and in Table 13 were reported by Thordarson ten years ago. The reasons revealed by his study of students who failed to complete supervised correspondence study courses in North Dakota are:

1. Lack of time
2. Change of plans
3. Regarded course unsatisfactory
4. Illness
5. Found no need for the courses.[1]

1. T. W. Thordarson, "Motivating Students to Complete Their Courses." Proceedings of the 33rd Annual Meeting, Na. Univ. Ext. Assoc. (Chicago, 1948) p. 160.

Approximately four times as many responses were received from the principals as from the students in regard to reasons for non-completion of supervised correspondence study courses. These responses are shown below.

Table 13.--Reasons for non-completion of supervised correspondence courses given by principals

Reason	Number of Times Indicated	Percentage of Principals
1. Too much effort and initiative required	203	60
2. Unable to maintain interest	119	35
3. Too much time required	85	25
4. Not enough help from:		
a. Instructor	18	5
b. Supervisor	65	19
5. Course was too difficult	44	13
6. Too much writing required	32	9
7. Transferred to another school	15	4
8. Had to reduce number of courses being taken	11	3
9. Too expensive	9	3
10. Student lacked ability	7	2
11. Papers not returned in time to help student prepare later assignments	7	2
12. Quit school or changed plans	7	2
13. Study guide inadequate	1	--
Total	623	--

The principals were asked to double-check chief reasons. Thirty-six (36) indicated that too much effort and initiative was required to study alone. The other reasons which appear above were either not double-checked or were so indicated from one to five times. Those indicated as chief reasons at least four times are Nos. 2, 3, and 5 in the table above.

Some of the factors influencing the non-completion of supervised correspondence study courses also appear among the disadvantages of the method of instruction reported by both groups of respondents (Tables 18 and 20); they are evident also in the suggestions for improving this method of instruction given in Table 22 and in Table 23. Among the most obvious unsatisfactory features are those which are related to the time factor, assistance by supervisors and instructors, and the handling of papers.

Such reasons for non-completion of courses noted by both students and principals as change of plans, transfer to another school, need to reduce number of courses being taken, illness, and dropping out of school not unique to supervised correspondence study; they also apply to courses taken by regular classroom instruction.

Effectiveness of Supervised Correspondence Study Compared with Classroom Instruction

The students were given a chance to indicate how, in their opinion, supervised correspondence study compares with regular classroom instruction in general and with regard to courses studied in the same subject field. Since only those students who had studied courses in the same subject field by both methods of instruction could provide responses to the latter, the number of responses is smaller than that received for the former. One hundred and eighty-one (181) responses to this item were received. In view of the smaller population involved, this sample size is probably adequate to make inferences regarding this particular population. The responses obtained to the question concerning the comparison of the two methods of instruction with respect to courses studied in the same subject field are given below by subject fields.

Table 14.--Comparison of supervised correspondence study with regular classroom instruction with respect to courses studied in the same subject field

Subject Field	Number of Students Who Learned					
	Much More	More	As Much	Less	Much Less(by S.C.S.*)	Total
English	13	11	7	5	1	37
Social Studies	5	10	2	7	1	25
Science	3	9	5	4	1	22
Mathematics	5	15	8	15	1	44
Trade & Industrial Education--Vocational	0	3	0	1	0	4
Business Education	5	8	10	1	0	24
Home Economics	3	2	2	3	0	10
Art	0	1	0	0	0	1
Foreign Language	2	7	4	1	0	14
Total	36	66	38	37	4	181
Percentage	19.8	36.4	20.9	20.4	2.2	99.7

* Supervised Correspondence Study

Table 3 contains the results of the chi-square test applied to these observations divided into the dichotomous categories:

1. Learned as much or more by correspondence.

2. Learned less by correspondence.

The hypothesis tested is that the opinion amoung students concerning whether they learned as much or more, or learned less by supervised correspondence study is evenly divided. The computed chi square is 54.2, which is larger that 3.841, the table chi square at the .05 level of significance; therefore, the hypothesis can be rejected. It may be concluded with 95 per cent confidence that considerably more than half of the students are of the opinion that they learned as much or more by supervised correspondence study.

With respect to how the effectiveness of supervised correspondence study compares in general with regular classroom instruction, 275 responses were obtained from the students. The number of times each of the three categories was indicated by male and female students and the student-respondents combined are shown below.

Table 15.--Comparison by students of supervised correspondence study in general with regular classroom instruction

	Male		Female		Total	
	Number	Percentage	Number	Percentage	Number	Percent
Learned more by supervised correspondence study	40	32	57	38	97	35
Learned as much by supervised correspondence study	49	39	55	37	104	38
Learned more by classroom instruction	36	29	38	25	74	27
Total	125	100	150	100	275	100

Table 4 gives the results of the chi-square analysis of the opinions of the students. The hypothesis tested is that opinion is divided evenly among students as to whether, in general, they learn as much or more by supervised

correspondence study or whether they learn more by classroom instruction. On the basis of the results obtained by the chi-square analysis, the hypothesis can be rejected with at least 95 per cent confidence; and it can be concluded that a clear majority of students are of the opinion that, in general, they learn as much or more by supervised correspondence study that they do by classroom instruction.

The principals also expressed their opinion with respect to the comparison of the achievement resulting from the two methods of instruction. Table 16 contains the opinions given by 329 principals.

Table 16.--Opinions of principals regarding the comparison of supervised correspondence study and regular classroom instruction with respect to achievement

	Number of Times Indicated	Percentage
More achievement by supervised correspondence study	22	7
About the same achievement	112	34
Less achievement by supervised correspondence study	195	59
Total	329	100

The results obtained for the chi-square analysis of the data are shown in Table 6. Based upon these results, the hypothesis, that there is no significant difference of opinion among principals regarding the achievement resulting from supervised correspondence study compared with regular classroom instruction, may be rejected with at least 95 per cent confidence. Therefore, it may be concluded that significantly more than half of the principals sampled are of the opinion that supervised correspondence study results in less achievement than by regular classroom instruction. In addition, the 95-per-cent confidence limits were computed for the proportion of principals indicating less achievement by students under supervised correspondence study than by

those under regular classroom instruction. The limits obtained are .54 - .64

Advantages and Disadvantages of Supervised Correspondence Study

Related to the effectiveness of supervised correspondence study are the advantages and disadvantages pertaining to this method of instruction. The responses received from students in this connection are shown in Tables 17 and 18.

Table 17.--Advantages of supervised correspondence study noted by students

Advantages	Number of Times Indicated	Percentage of Students
1. Can progress at own speed and ability.	225	74
2. Dependence on self to do the work.	184	60
3. Better study habits result.	136	44
4. Assignments are easy to understand.	109	36
5. All parts of the assignment are done by the student	106	35
6. Learn more than by classroom instruction.	97	32
7. Study guides are particularly helpful.	88	29
8. Get a great deal of individual help from the:		
a. Supervisor	37	12
b. Instructor	44	14
9. Miscellaneous	17	6
Total	1,043	--

Some of the miscellaneous advantages noted are: (1) can study courses not available otherwise, (2) more thinking required, (3) can work independently, and (4) receive higher grades. The last is regarded by some principals as one of the weaknesses of supervised correspondence study and is reflected in the suggestion that achievement standards be raised as a means of improving this method of instruction.

Somewhat more than half as many responses were received for questionnaire item 10 regarding disadvantages as were received for item 9 listing advantages. Those disadvantages noted by the students sampled are shown below.

Table 18.--Disadvantages of supervised correspondence study noted by student respondents

Disadvantages	Number of Times Indicated	Percentage
1. Lack of class discussion	158	52
2. Miss the assistance which a regular teacher could give	99	32
3. Instructions are not clear.	53	17
4. Not enough help from the:		
a. Instructor	17	6
b. Supervisor	35	11
5. Study guides are inadequate	50	16
6. Papers are not returned soon enough	45	15
7. Too much time is required	44	14
8. Difficult to adapt study to individual needs	31	10
9. Miscellaneous	32	10
Total	564	--

Some of the miscellaneous disadvantages indicated are: (1) textbooks are too difficult to understand, (2) too much writing required, and (3) easy to put off doing assignments.

Respondents were given an opportunity to indicate other advantages and disadvantages which were not listed in the items provided in the questionnaire. Some who did use the space provided for this purpose merely expressed satisfaction or dissatisfaction, without referring to any particular aspect of supervised correspondence study.

The principals provided data regarding advantages and disadvantages surrounding supervised correspondence study which have been noted by their students. The total number of advantages indicated by the principals was approximately 200 less than the number noted by the student-respondents; the number of disadvantages noted by the principals exceeded the total number given by students by almost 500. The data obtained from the principals are shown in Tables 19 and 20.

Table 19.--Advantages of supervised correspondence study noted by students as reported by principals

Advantages	Number of Times Indicated	Percentage of Principals
1. Can progress at own speed and ability.	260	76
2. Dependence on self to do the work.	206	61
3. Study guides are particularly helpful.	87	26
4. Better study habits result.	78	23
5. All parts of the assignment are done by the student.	70	21
6. Get a great deal of individual help from the:		
a. Supervisor	44	13
b. Instructor	19	6
7. Assignments are easy to understand.	40	12
8. Learn more than by classroom instruction.	19	6
9. Makes available courses that are not offered by the school.	10	3
10. Provides a means of earning credits when unable to attend regular classes because of schedule conflicts, illness, etc.	8	2
11. Miscellaneous	15	4
Total	856	--

The two most frequently mentioned advantages which fall in the miscellaneous category are: (1) means of providing for individual interests not possible otherwise and (2) means of making up failures or credits needed.

Table 20.--Disadvantages of supervised correspondence study expressed by students as reported by principals.

Disadvanteages	Number of Times Indicated	Percentage
1. Miss the assistance which a regular teacher could give	216	64
2. Lack of class discussion	194	57
3. Too much time is required.	131	39
4. Difficult to adapt study to individual needs	115	34
5. Not enough help from the:		
a. Instructor	40	12
b. Supervisor	64	19
6. Instructions are not clear.	60	18
7. Papers are not returned soon enough.	38	11
8. Textbooks are too difficult to understand.	26	8
9. Study guides are inadequate	20	6
10. Difficult to maintain interest and initiative when working alone	8	2
11. Miscellaneous	12	4
Total	924	--

Some of the miscellaneous disadvantages noted were related to the inability of students to budget their time, maintain interest, or understand and follow instructions.

It is likely that some of the advantages and disadvantages reported by the principals reflect their own opinions, which have evolved out of their own experience in the administration of supervised correspondence study programs, and are not those specifically expressed to them by their students. Lact of class discussion and the fact that students miss the assistance which a regular teacher could give are pointed out most frequently by both groups of respondents. Twice as many principals as students feel that not enough help is provided by instructors and supervisors. In the case of the students, twice as many as those who stated that they did not get enough help from the instructor said the same about the supervisor. Sixty-four (64) principals indicated lack of help from the supervisor as a disadvantage, while forty (40) principals made this response in regard to instructors--a difference of nine (9) per cent.

Extent to which Supervised Correspondence Study helps to prepare Students for Subsequent Study in the same Subject Field

Those student-respondents who studies a course by classroom instruction subsequent to having studied one in the same subject-matter field by supervised correspondence study indicated to what extent the correspondence course helped to prepare them for the later course. The data obtained is shown below by subject-matter fields and the institutions where subsequent courses were taken by classroom instruction.

Table 21.--Extent to which supervised correspondence study courses helped to prepare students for later courses by classroom instruction, by institutions and subject fields

Subject Fields and Institutions in which Later Courses were taken	Very Well	Well	Some	A Little	Very Little	Total
HIGH SCHOOL						
English	8	9	9	0	0	26
Social Studies	6	3	6	0	1	16
Science	3	2	4	2	0	11
Mathematics	3	6	4	0	0	13
Foreign Language	0	1	1	1	0	3
Industrial Arts	1	1	2	0	0	4
Business Education	8	1	1	0	0	10
Home Economics	2	1	1	1	1	6
Art	0	1	0	0	0	1
Total	31	25	28	4	2	90
Percentage	34.4	27.7	31.1	4.4	2.2	99.8
COLLEGE						
English	2	4	6	0	0	12
Social Studies	3	3	0	0	1	7
Science	6	9	1	0	0	16
Mathematics	15	12	3	0	1	31
Foreign Language	1	1	4	0	1	7
Business Education	1	1	1	0	0	3
Total	28	30	15	0	3	76
Percentage	36.8	39.5	19.7	-	3.9	99.9
OTHER INSTITUTIONS						
Social Studies	0	1	0	0	0	1
TOTAL	59	56-	43	4	5	167
PERCENTAGE	35.3	33.5	25.7	2.4	2.9	99.8

Sixty-two per cent (62%) of the correspondence courses were thought by students to have helped prepare them very well or well for subsequent high-school resident courses in the same subject field; while students felt the same about seventy-three per cent (73%) of these courses in regard to the extent to which they were prepared for college courses. The difference of eleven per cent (11%) might be explained by the possibility that more of the college courses were initial courses in the same branch of the subject-matter area as the correspondence courses than were the resident courses in high school.

How the Effectiveness of Supervised Correspondence Study can be increased

The lists of disadvantages in a preceding section provide information regarding some of the elements of supervised correspondence study that are subject to improvement. In addition, suggestions and recommendations for increasing the effectiveness of this method of instruction were obtained from both groups of respondents. The ways by which supervised correspondence study could be improved by instructors at the correspondence centers and supervisors at the local schools, which were suggested by the student-respondents, are given below.

Table 22.--Ways in which supervised correspondence study can be improved by instructors and supervisors, as suggested by student-respondents

Suggestions	Number of Times Offered	Percentage
FOR INSTRUCTORS:		
1. Give clear explanation of parts of assignments done incorrectly.	80	26
2. Return papers more promptly.	46	15
3. Afford opportuntity to re-work assignments done poorly	35	11
4. Provide a more adequate study guide	25	8
5. Show more personal interest in students.	15	5
6. Miscellaneous.	17	6
Total	218	--
FOR SUPERVISORS:		
1. Provide more assistance with subject-matter difficulties or help student find someone who could assist him	53	17
2. Provide better working conditions for students	51	17
3. Help students to understand what they are supposed to do.	46	15
4. Show more interest in the progress of students	40	13
5. Help students to interpret comments made by instructors on papers returned.	37	12
6. Handle records and correspondence more promptly and efficiently.	27	9
7. Miscellaneous.	10	3
Total	264	--

Some of the miscellaneous ways by which instructors could improve this method of instruction, which were offered are: (1) make course more challenging, (2) make instructions clearer, and (3) return test papers. Those pertaining to supervisors: (1) be less opposed to the use of the method, (2) be available when needed, and (3) take an interest in the courses studied.

The suggestions for improving supervised correspondence study made oftener than once by the principals are classified below into two catagories, those applicable to the correspondence center and to the local school.

Table 23.—Ways in which supervised correspondence study can be improved by the correspondence centers and the local schools, as suggested by principals

Suggestions	Number of Times Offered
CORRESPONDENCE CENTERS:	
1. Raise achievement standards and make courses more challenging.	15
2. Make instructions and questions clearer.	6
3. Return papers sooner or permit supervisors to make them.	4
4. Provide assignments that are directed toward the development of critical thinking, judgment, and comparison of ideas.	3
5. Make suggestions and comments on papers returned.	3
6. Shorten time limit required to complete courses and permit able students to complete courses as fast as they are capable of doing so.	3
7. Improve study guides, tests, and methods.	3
8. Conduct workshops and prepare a manual for supervisors.	22
9. Provide resource materials or suggest sources of additional information.	2
10. Make more practical and technical courses available.	2
Total.....	43
LOCAL SCHOOL:	
1. Provide more supervision.	13
2. Provide regular periods for correspondence study.	7
3. Provide more guidance.	6
4. Assign regular classroom teachers as supervisors.	5
5. Give supervisors extra pay.	5
6. Give supervisors more time or a definite time to help students.	4
7. Cooperate more fully in the conduct of the program.	2
Total.....	42

Other suggestions included: the greater use of audio-visual aids, illustrations, and color in mimeographed materials; more information from the instructor to the local school regarding the progress of the student and the

instructor's impression of him; reduction of "busy work"; and giving students a greater awareness of the possibilities surrounding supervised correspondence study.

Attitude of Students toward Supervised Correspondence Study

Three hundred and twenty-nine (329) principals gave their opinions regarding the attitude of students toward supervised correspondence study. Twenty-two (22), or 7 per cent, were of the opinion that students find supervised correspondence study highly satisfactory; 230, or 70 per cent, satisfactory; and 77, or 23 per cent, unsatisfactory.

Table 5 contains the results of the chi-square analysis of the data categorized as satisfactory or unsatisfactory. The hypothesis, that there is not significant difference in opinion among principals concerning whether or not students find supervised correspondence study satisfactory, can be rejected with at least 95 per cent confidence. It may be condluded that, in the opinion of the principals, a high percentage of students find supervised correspondence study satisfactory.

Summary of Findings

Findings relevant to the questions arising out of the problem are summarized below:

1. Reasons for using supervised correspondence study.--The unavailability of courses by resident instruction and the need to make up credit deficiencies resulting from failures and other factors were indicated most often by students and principals as reasons for using the method. Other reasons noted with less frequency are: schedule conflicts, inability of students to attend regular classes, acceleration, and special needs or interests.

2. Proportion of courses completed.--The student-respondents completed 85 per cent of the correspondence courses begun; the confidence limits for the

proportion of courses completed by the population was found to be .83 - .88. The principals reported that 81 per cent of their students completed correspondence courses; the confidence limits of the proportion of completions in the population are .80 -.82.

3. Reasons for non-completion of courses.--The outstanding reasons given by student-respondents and the percentage of students who made the responses are: (1) difficulty of course when studying alone (44%), (2) time factor (45%), (3) inadequacy of help from supervisors (18%), and (4) dissatisfaction with the handling of papers by correspondence centers (16%). Those indicated most often by principals are: (1) too much effort and initiative required (60%), (2) inability to maintain interest (35%), (3) time factor (25%), and (4) inadequate help from supervisors (19%).

4. Achievement resulting from supervised correspondence study.--In comparing the achievement resulting from supervised correspondence study and classroom instruction in general and with respect to courses studied by both methods in the same subject fields, significantly more than half of the students sampled are of the opinion that they learned as much or more by correspondence. However, significantly more than half of the principals sampled are of the opinion that less achievement results from supervised correspondence study than by resident instruction.

5. Advantages of supervised correspondence study.--That students can progress at own speed and ability was indicated as an advantage by approximately three-fourths of the students and principals; dependence on the students themselves to do the work was given by three-fifths of the students and principals. Forty-four per cent (44%) of the students and 23 per cent of the principals felt that better study habits result from correspondence study. Individual help from supervisors was indicated as an advantage by only 12 per cent of the students and 13 per cent of the principals; more than twice as

many students as principals felt the same regarding the individual help provided by instructors.

6. Disadvantages of the method.--More than half of the students and principals listed the lack of class discussion as a disadvantage of the method. That students miss the assistance which a regular teacher could give was indicated by 64 per cent of the principals and 32 per cent of the students. Thirty-nine per cent (39%) of the principals and 14 per cent of the students noted the amount of time required of students as a disadvantage. Lack of clear instructions was given by 18 per cent of the principals and 17 per cent of the students. Inadequate help from supervisors was given by 19 per cent of the principals and 11 per cent of the students. Twelve per cent (12%) of the principals and 6 per cent of the students felt the same regarding the assistance provided by instructors. Delay in handling papers was pointed out by 15 per cent of the students and 11 per cent of the principals.

7. Extent to which the method helps to prepare for later courses in the same subject field.--A total of 90 supervised correspondence study courses were followed by high-school courses in the same subject field by resident instruction: of these, 62 per cent of the courses were indicated by students as having prepared them very well or well for resident courses. Seventy-six (76) supervised correspondence study courses were followed by college courses in the same subject field. Seventy-six per cent (76%) of these courses were thought by students to have prepared them very well or well for the college courses. Sixty-nine per cent (69%) of all courses studied by correspondence which were followed by classroom instruction in the same subject field in high school, college, and other institutions, were thought by students to have

helped them to prepare very well or well for the later courses.

8. How the effectiveness of the method could be improved.--The suggestions regarding how supervisors and instructors could improve the effectiveness of supervised correspondence study were primarily concerned with the manner in which the method is administered. Most of the recommendations applicable to supervisors which were made by students were related to the need for greater assistance and interest on the part of the supervisors. Outstanding among the suggestions applicable to the instructors were those pertaining to the manner in which the papers sent in by students are processed. Twenty-six per cent (26%) of the students felt that clear explanation of parts of assignments done incorrectly would help to improve the effectiveness of this method; 15 per cent stated that papers could be returned more promptly.

9. Attitude of students toward supervised correspondence study.--In the opinion of the principals sampled, a high percentage of students find supervised correspondence study satisfactory. Seven per cent (7%) of the principals are of the opinion that students find the method highly satisfactory 70 per cent, satisfactory; and 23 per cent, unsatisfactory.

On the basis of findings of this study, only one of the three assumptions made can be regarded as untenable. The hypotheses, (1) that high-school students generally find supervised correspondence study a satisfactory means of studying high-school subjects, and (2) that they believe that the method of instruction compares favorabl with regular classroom instruction, when achievement is a consideration, can be upheld. However, the assumption, that principals of high schools which have used supervised correspondence study

feel that this method compares favorably with regular classroom instruction with respect to achievement, cannot be supported by these findings.

This concludes the report of the findings of the study which are relevant to the questions raised and the hypotheses stated. The interpretation of these findings follows.

IV. INTERPRETATION OF FINDINGS

The preceding section reported the findings of the study. This section states conclusions based upon the findings, makes recommendations, and indicates further research needed in the area of supervised correspondence study.

Conclusions

The following are some conclusions which may be stated on the basis of the findings presented in the preceding section:

1. Supervised correspondence study has a useful role in the high-school program. The responses of both students and principals show that were it not for supervised correspondence study, students, in many instances, would be denied the opportunity to pursue needed courses in many subject-matter areas. Also, a large proportion of the student-respondents are of the opinion that achievement resulting from supervised correspondence study is as great or greater than that resulting from resident instruction. This opinion is supported by previous experimental findings by Childs and others which indicate that achievement resulting from supervised correspondence study is "generally as satisfactory, and in some cases more so, as the achievement of pupils who receive instruction by more traditional methods,...." [1] In light of this, it appears that supervised correspondence study has a broader function to perform than that of merely adding to the number of courses which are available to students. It seems that this method of instruction has a greater potentiality for increasing the flexibility of the curriculum than is being utilized currently. More important than the use of supervised correspondence study as a means of simply supplementing the curriculum, appears to be the possibility of employing this method of

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1. Childs, op.cit., p. 28.

instruction to help relieve pressures imposed by curriculum requirements, which often tend to make curriculum revision difficult, if not impossible.

2. If supervised correspondence study is to make its maximum contribution to the high school program, especially during this period of teacher-shortage in needed subject-matter areas and in certain school localities, adequate administration of the program will need to be provided. Some of the programs presently going under the guise of supervised correspondence study are little more than provisions for studying correspondence courses with very little or no supervision, other than that provided during examinations. This situation is reflected in the responses of both students and principals which dealt with the part of the program which is under the auspices of the local school.

3. Many of the objections to supervised correspondence study and recommendations for its improvement offered by students and principals appear to be directed at the manner in which the method is applied or administered. As revealed by the findings of this study, many of the correspondence study programs are being administered by principals who believe that the method is less effective than classroom instruction. For these principals, correspondence study is only a stop-gap measure. As such, it is not likely to be given much, if any, consideration in any long-range planning for curriculum revision, in-service training of teachers, or building programs. Until supervised correspondence study is considered an integral and effective part of the total school program, it is doubtful that existing inadequacies of supervision, guidance, and facilities will be given much attention. Furthermore, unless local school personnel involved are favorably disposed to supervised

correspondence study, objective in their estimation of its effectiveness, and aware of the manner in which it should be employed, the method is not likely to be used as extensively and effectively as it could be used for purposes presently not being served by resident instruction. Neither will the potentialities for increasing the flexibility of the curriculum be fully realized.

4. The student-respondents are more conscious of the values of correspondence study than the principals. The resistance to this method comes from administration rather than from those who actually study by the method. Principals, through training and experience, probably are more sensitive to the values of regular classroom instruction than to those of supervised correspondence study. This may influence their judgment regarding the effectiveness of a method of instruction which departs somewhat from traditional methods.

Recommendations

It is hoped that administrators of high schools and correspondence centers, as well as others, who are concerning themselves with the task of providing adequate educational opportunities, required to meet the demands of a complex and dynamic society, will consider the results of this study and the recommendations which follow.

1. In view of the possibility that the increasing teacher-shortage in certain subject-matter areas and school localities might necessitate a wider use of supervised correspondence study, prospective teachers and school administrators, as well as those already in the schools, need to be made aware of the values inherent in this method of instruction. Appropriate education courses on the undergraduate and graduate levels should include units concerning

the nature and application of supervised correspondence study. Workshops, on local or state levels should be included in the in-service training activities of teachers and administrators of schools which plan to use or are currently using this method of instruction.

2. There is a need for a textbook or a comprehensive manual which could be used by supervisors and administrators to familiarize themselves with the method and how it could be employed advantageously. The only textbook on the subject of supervised correspondence study was published in 1939 and is out-of-print.[1] To meet this need, financial support for the production of a book or manual dealing with this subject should be sought from one of the foundations which are concerning themselves with the teacher-shortage problem. In the field of supervised correspondence study, there are a number of persons highly qualified to assume this task.

3. Evaluations of the supervised correspondence study programs should be conducted frequently and periodically. Such evaluations should involve the staff of the correspondence centers as well as the principals and supervising teachers.

4. Closer liaison between the staff of correspondence centers and that of the local schools using supervised correspondence study is recommended.

5. Inadequate supervision was pointed out by both students and principals as a weakness of the method. Undoubtedly, some of this inadequacy results more from the heavy workload of teachers than from a negative attitude toward supervised correspondence study on the part of the principals and teachers.

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1. S. C. Mitchell, Supervised Correspondence Study for Individual Pupils Needs. Scranton, Pa.: The International Textbook Company, 1939.

The substitution of supervised correspondence study for classroom instruction serving small groups of students might free teacher-time and energy that can be utilized for supervision of the total correspondence program.

6. Dissatisfaction with the handling of papers by some of the correspondence centers is readily apparent in the findings of this study. This is an old problem which correspondence centers have been trying to solve for many years. It is evident from this study that some have not succeeded and need to do more in this respect.

Further Research Needed in this Area

Investigations into the area of supervised correspondence study have been undertaken since the late 1920's, soon after this method of instruction was introduced in high schools. A few of these studies have dealt with the matter of achievement of students who study by correspondence; however, evidence in this regard is still not adequate. The following are a few problems which persons who are interested in increasing the research evidence in this area might consider.

1. There is a need for objective evidence of the success or failure of correspondence students in college as compared with college students who have not used supervised correspondence study in high school. The kind of evidence obtained by Childs for mathematics courses is needed for all major subject-matter areas which are studied in high school.[1]

2. There is a need for additional controlled studies by local school administrators which seek to answer the question of how students who study

1. Gayle B. Childs. "Success in Initial University Mathematics Courses of Students with Correspondence and Non-Correspondence Backgrounds in High School Mathematics," Journal of Educational Research, Vol. 49 (April, 1956), pp. 607-12.

courses by supervised correspondence study compare on achievement tests with those who do so by resident instruction.

3. Sixty per cent of the principals felt that students were not willing to, or capable of, exerting the amount of effort and initiative required to complete correspondence courses. Studies which attempt to measure the extent of supervision and counseling afforded students who complete correspondence courses and those who do not might produce evidence concerning whether or not there is a relationship between the amount of effort students exert on their courses and the extent of supervision and counseling provided.

4. There is need for further study of the causes of resistence on the part of principals toward supervised correspondence study.

Concluding Statement

This study has thrown additional light upon the worth of supervised correspondence study as a method of instruction, and it is hoped that the findings and conclusions will be useful to all those interested in this method of study. However, it is evident that many questions concerning the effectiveness of supervised correspondence study remain unanswered. It is hoped that other researchers will respond to this challenge.

APPENDIX I. QUESTIONNAIRES

A. Questionnaire Form A (Students)

B. Questionnaire Form B (Principals)

QUESTIONNAIRE FORM A

Name:_____ Address:_____

Age:_____ Sex: Male_____ Female_____

How many years of school have you completed? (Not counting this year)

Grades: 7___8___9___10___11___12___ First-Year College___ Second-Year College___

Are you attending high school now? Yes___ No___

Did you graduate from high school? Yes___ No___

---

1. List all high-school courses that you have studied by supervised correspondence study; that is, under the supervision of a teacher, principal, or some other person, while you were enrolled in a high school. (Check appropriate column to indicate whether course was completed or whether you withdrew from the course before completing it.)

	Title of Course	Completed Course	Withdrew before Completing Course
a.	_____	_____	_____
b.	_____	_____	_____
c.	_____	_____	_____
d.	_____	_____	_____
e.	_____	_____	_____
f.	_____	_____	_____

2. Why did you enroll in supervised correspondence courses? (Check any reason(s) listed below which are applicable.)

a. Number of students requesting the course was too small to form a class for regular instruction. _____

b. Qualified teacher was not available for regular instruction. _____

c. Could not take the course during the year when it was offered by regular classroom instruction.

(Form A Cont'd.)

d. Course was offered during a class period when I could not take it. ____

e. To make up study because of late entrance or irregular attendance. ____

f. Unable to attend regular classes because of illness, accident, etc. ____

g. Other reason(s): _____

_____

_____

_____

3. If you have withdrawn from one or more supervised correspondence courses before completing, indicate reason(s) for withdrawing from such course(s).

	(Check)	(Enter title of the course)
a. Course was too difficult.	____	_____
b. Too much time required.	____	_____
c. Too much writing required.	____	_____
d. Not enough help from the instructor at the correspondence center.	____	_____
e. Not enough help from the teacher or supervisor at the high school.	____	_____
f. Too expensive.	____	_____
g. Papers not returned in time to be of help in studying later assignments.	____	_____
h. Transferred to another school which offered the course by regular classroom instruction.	____	_____
i. Had to reduce number of courses being taken.	____	_____
j. Too difficult to keep up work when studying alone.	____	_____
k. Parents disapproved.	____	_____

(Form A Cont'd.)

l. Others disapproved -- counselor, teacher, other students, others. (Underscore one.) _____ _____

m. Other reason(s): _____

_____

4. After completing courses by supervised correspondence study, did you take any course (s) in the same subject field by regular classroom instruction? Yes_____ No_____ (If "yes", please fill in the table below; if "no", disregard the rest of this item.)

Supervised Correspondence Course	Courses in Same subject Field Taken Later by Some Other Method.	Type of Institution (high school, college, or any other)	Extent to which the correspondence course helped you to prepare for the later course. Use scale: 1. Very well. 2. Well. 3. Some. 4. A little 5. Very little.
EXAMPLE			
General Science	Chemistry Physics	high school college	2. Well 4. A little

5. Indicate what you consider are the chief advantages of supervised correspondence study.

a. I could progress at my own speed and acility. _____

b. Assignments were easy to understand. _____

c. Had a chance to answer all questions and work all problems and exercises. _____

d. I learned more than I usually do by classroom instruction. _____

e. I had to depend on myself to do the work. _____

f. I got a great deal of individual help from the correspondence instructor. _____

g. I got a great deal of individual help from the supervisor in the high school. _____

h. I learned better ways of studying a subject while studying by supervised correspondence study. _____

i. Study guides were particularly helpful. _____

j. Other(s)_____

_____

6. Indicate what you consider are the chief disadvantages of supervised correspondence study.

a. Unable to benefit from regular classroom discussion. _____

b. Missed having a teacher nearby to explain the lesson and answer my questions. _____

c. Do not receive enough help from the teacher at the correspondence center. _____

d. Do not receive enough help from the supervisor at the high school. _____

e. Textbooks are too difficult to understand. _____

f. The instructions are often not clear. _____

g. Too much time is required. _____

h. Papers are not returned in time to be of help in studying later assignments. _____

i. Difficult to adapt study to my individual needs. _____

(Form A Cont'd.)

j. Study guides tend to be inadequate. _____

k. Other(s)_____

_____

7. List one course which you studied by supervised correspondence study and another in the same subject field which you took by regular classroom instruction.

_____

(Supervised Correspondence Course) (Regular Classroom Course)

Check one of the items below to indicate how the supervised correspondence study method compared with the regular classroom method in the amount you learned or got out of the course.

a. Learned much more by correspondence. _____

b. Learned more by correspondence. _____

c. No difference. _____

d. Learned less by correspondence. _____

e. Learned much less by correspondence. _____

8. In your opinion, how does supervised correspondence study in general compare with regular classroom instruction? (Check one.)

a. I learn more by supervised correspondence study than by classroom instruction. _____

b. I learn as much by supervised correspondence study as I do by classroom instruction. _____

c. I learn more by classroom instruction than by supervised correspondence study. _____

9. What could the instructor at the correspondence center have done to improve this method of instruction?

a. Could have returned my papers more promptly. _____

(Form A Cont'd.)

b. Could have provided a more adequate study guide. _____

c. Could have given a clear explanation of how to solve problems or answer questions that I missed. _____

d. Could have given me an opportunity to re-work assignments that I did poorly. _____

e. Could have shown more personal interest in me. _____

f. Other(s): _____

_____

_____

10. What could the supervisor at the high school have done to improve this method of instruction?

a. Might have helped me more to understand what I was supposed to do. _____

b. Might have provided more assistance with subject-matter difficulties or helped me to find other teachers who could help me. _____

c. Might have shown more personal interest in my progress. _____

d. Might have given more help in understanding comments by the correspondence instructor on returned papers. _____

e. Might have handled records and correspondence more promptly and efficiently. _____

f. Might have provided better working conditions for students (place of study may have been unsuitable, there may have been too many distractions, a lack of a regular schedule, etc.) _____

g. Other(s): _____

_____

_____

Kindly return to: School of Education
The George Washington University
Washington 6, D. C.

QUESTIONNAIRE FORM B

Name:_____Principal of_____High School

Located at:_____

Grades in your school 9-12_____ or 10-12_____ (Check)

Approximate total enrollment in your school:_____

Approximate number of students currently enrolled in supervised correspondence study: _____

1. If supervised correspondence study has been used as a method of instruction in the past three years, how many of your students (nearest approximation, if exact figures are not available) have been enrolled in such courses? (Enter figures below. Omit current year.)

School Year	Number of Students Enrolled	Number of Courses They Completed	Number of Courses They Dropped	Number still Incomplete
1956-57	_____	_____	_____	_____
1955-56	_____	_____	_____	_____
1954-55	_____	_____	_____	_____

2. Why was this method of instruction used? (Check all contributing reasons and double-check chief reason.)

a. Lack of qualified teachers in certain subject fields. _____

b. Number of students requesting certain courses was too small to make a regular class financially feasible. _____

c. To provide for needs of students requiring courses which are offered on an alternate-year basis. _____

d. To take care of schedule conflicts. _____

(Form B Cont'd.)

e. To provide for students entering late. _____

f. Other reason(s): _____

_____

3. If the plan has been discontinued, check reason(s) for doing so and encircle a chief reason.

a. No request for courses. _____

b. Qualified teachers for regular classroom instruction obtained. _____

c. Supervised correspondence instruction was not successful. _____

d. Number of students requesting courses grew large enough to justify regular classroom instruction. _____

e. Other(s): _____

_____

4. What appear to be the principal reasons for students' dropping of courses after they have been started? (Check reasons that apply and encircle the most frequent reason.)

a. Courses were too difficult. _____

b. Too much of student's time required. _____

c. Too much effort and initiative required to study alone. _____

d. Too much writing required of students. _____

e. Not enough help from the instructor at the correspondence center. _____

f. Not enough time for the local teacher or supervisor to help students. _____

g. Too expensive. _____

h. Papers not returned in time to be of help in studying later assignments. _____

i. Students transferred to another school. _____

j. Students had to reduce the number of courses being taken. _____

k. Unable to maintain interest without regular classroom instruction. _____

l. Other reason(s): _____

_____

5. In the assignment of teachers to supervise correspondence courses, how important do you consider the following factors?

	Very Important	Of Moderate Importance	Little or No Importance
a. Special preparation in the field of the course to be supervised.	_____	_____	_____
b. Previous training in supervising correspondence study.	_____	_____	_____
c. Previous experience in supervising correspondence study.	_____	_____	_____
d. An unusually broad general education.	_____	_____	_____
e. Adaptability to new situations.	_____	_____	_____
f. Interest and skill in stimulating pupils to work.	_____	_____	_____

g. Other(s): _____

_____

6. How are supervised correspondence courses scheduled?

a. Definite periods and rooms scheduled during the regular school day. _____

b. Scheduled whenever the individual student has a period free from regular classroom instruction. _____

c. No special arrangement. _____

d. Other arrangements: _____

_____

_____

(Form B Cont'd.)

7. Where do supervised correspondence students usually work on their assignments? (Check as many as apply.)

a. Library	_____	e. Shop	_____
b. Study hall	_____	f. Home	_____
c. Special room	_____	g. Elsewhere	_____
d. Laboratory	_____		

8. Students generally find supervised correspondence study as a method of instruction:

a. Highly satisfactory. _____

b. Satisfactory. _____

c. Unsatisfactory. _____

9. What are some of the advantages of supervised correspondence study which are noted by students who have used this method?

a. Could progress at own speed and ability. _____

b. Assignments are easy to understand. _____

c. Have a chance to answer all questions and work all problems and exercises. _____

d. Learn more than they usually do by classroom instruction. _____

e. Have to depend on themselves to do the work. _____

f. Get a great deal of individual help from the correspondence instructor. _____

g. Get a great deal of individual help from the supervisor in the high school. _____

h. Learn better ways of studying a subject while studying by supervised correspondence study. _____

i. Study guides are particularly helpful. _____

j. Other(s): _____

_____

_____

(Form B Cont'd.)

10. What are some of the objections to supervised correspondence study offered by students who have used this method?

a. Unable to benefit from regular classroom discussion. _____

b. Students miss having a teacher nearby to explain the lesson and answer questions. _____

c. Do not receive enough help from the teacher at the correspondence center. _____

d. Do not receive enough help from the supervisor at the high school. _____

e. Textbooks are too difficult to understand. _____

f. The instructions are not clear. _____

g. Too much time is required. _____

h. Papers are not returned in time to be of help in studying later assignments. _____

i. Difficulty of adapting study to individual needs. _____

j. Study guides tend to be inadequate. _____

k. Other(s): _____

_____

_____

11. In your opinion, how does supervised correspondence study compare with regular classroom instruction?

Supervised correspondence study generally results in:

a. More achievement. _____

b. About the same achievement. _____

c. Less achievement _____

12. In the administration of supervised correspondence study, did you experience substantial difficulty in any of the following? If so, check and explain the item.

a. Difficult to find a teacher with available time to serve as correspondence supervisor. ____

Explanation: _____

_____

_____

b. Difficult to find a teacher interested in supervising correspondence study. ____

Explanation: _____

_____

_____

c. Difficult to provide a suitable place in which to study: ____

Explanation: _____

_____

_____

d. Difficult to persuade the school board to pay for supervised correspondence study. ____

Explanation: _____

_____

_____

e. Difficult to interpret supervised correspondence study to pupils, parents, and the public. ____

Explanation: _____

_____

_____

(Form B Cont'd.)

f. Difficult to identify pupil needs and interests for guidance purposes. ____

Explanation: _____

_____

_____

g. Difficult to get permission of state authorities. ____

Explanation: _____

_____

_____

h. Difficult to get acceptance of correspondence credit by colleges and universities. ____

Explanation: _____

_____

_____

i. Difficult to get acceptance of credit by high schools to which students transfer. ____

Explanation: _____

_____

_____

j. Other(s): _____

_____

_____

_____

_____

_____

(Form B Cont'd.)

13. What suggestions or recommendations would you offer for improving this method of instruction?

14. Please list below any personal comments that you care to make concerning merits or difficulties or supplementing regular classroom instruction by supervised correspondence study. (For instance, should this method of instruction be <u>more widely</u> or <u>less widely</u> used?) (Why?)

Kindly return to: School of Education
The George Washington University
Washington 6, D. C.

APPENDIX II. COVERING LETTERS

A. Letter Sent With Questionnaires for the Purpose of Testing Their Effectiveness in Obtaining Required Data

B. Covering Letter for Questionnaire Form A

C. Covering Letter for Questionnaire Form B

D. Covering Letter for Follow-up Questionnaires Sent to Students

A. Letter Sent with Questionnaires for the Purpose of Testing Their Effectiveness in Obtaining Required Data

THE GEORGE WASHINGTON UNIVERSITY

SCHOOL OF EDUCATION

WASHINGTON 6, D. C.

Dear Mr.

We need your help in revising two questionnaires which we have prepared for use in connection with a study of supervised correspondence study in high school. This project is being conducted by the School of Education of The George Washington University, under a grant made by the U. S. Office of Education of the Department of Health, Education, and Welfare. The principal objective of this research project is to find out how satisfactory this method of instruction is from the viewpoint of students and administrators of high schools.

We have been informed that your school has utilized supervised correspondence study as a method of instruction. Therefore, we hope that you can assist us. Would you please fill in the enclosed questionnaire, prepared for principals of high schools that have utilized this method of instruction during the past three years.

We would appreciate it very much if you would distribute the enclosed test questionnaire(s) to students who are still attending your school and who were enrolled in supervised correspondence study courses (which were completed or dropped) during the three years prior to this school year. Would you and your students kindly note such items that are inappropriate, ambiguous, not clear, or which, for other reasons, should be revised or omitted.

Thank you for your cooperation.

Sincerely yours,

(Miss) Zena Valenziano,
Research Associate

Enclosures:
Questionnaire Form A ( )
Questionnaire Form B (1)

B. Covering Letter for Questionnaire Form A

THE GEORGE WASHINGTON UNIVERSITY

SCHOOL OF EDUCATION

WASHINGTON 6, D. C.

Dear

The School of Education of The George Washington University is conducting a research project on supervised correspondence study in high school. The objective of this study is to discover how effective this method of instruction is from the viewpoint of students who have been enrolled in such courses and of principals who have administered these programs.

You have been selected as one of the subjects which we would like to include in our study. Would you please be kind enough to fill out the enclosed questionnaire and return it to us as soon as possible. Please include only the information regarding correspondence courses which you studied under the supervision of a teacher, principal, or any other person while you were enrolled in a high school.

Thank you very much for your cooperation in this regard.

Yours very truly,

(Miss) Zena Valenziano,
Research Associate

C. Covering Letter for Questionnaire Form B

THE GEORGE WASHINGTON UNIVERSITY

SCHOOL OF EDUCATION

WASHINGTON 6, D. C.

Dear

The School of Education of The George Washington University, under a grant made by the U. S. Office of Education, Department of Health, Education, and Welfare, is conducting a research project on supervised correspondence study in high school. The objective of this study is to discover how effective this method of instruction is from the viewpoint of students who have been enrolled in supervised correspondence courses at the high-school level and of principals who have administered these programs.

Your school has been selected as one of the subjects of this study. We would like very much to know your appraisal of this method of instruction. Would you please be kind enough to fill out the enclosed questionnaire and return it to us as soon as possible.

Thank you for your cooperation in this regard.

Yours very truly,

(Miss) Zena Valenziano,
Research Associate

D. Covering Letter for Follow-up Questionnaires Sent to Students

THE GEORGE WASHINGTON UNIVERSITY
SCHOOL OF EDUCATION

WASHINGTON 6, D. C.

Dear

Several weeks ago, we sent you a questionnaire which we are using in connection with our research project on supervised correspondence study in high school. To date, we have not received a reply from you. Perhaps, you have not completed the questionnaire because you were not enrolled in a regular high school or were not supervised by someone while taking the correspondence course. If so, please indicate your reason for not completing the questionnaire at the bottom of this letter and return it to us as soon as possible.

However, if you did take a supervised correspondence course while you were enrolled as a high-school student, we would appreciate it if you would fill out the questionnaire and return it to us as soon as possible. We would like very much to include your responses in the report of this project, which we wish to complete by the end of March.

Many thanks for your cooperation.

Yours very truly.

_____
(Miss) Zena Valenziano,
Research Associate

Enclosures:
(1) Questionnaire
(2) Return Envelope

I am not completing the questionnaire because:

(Check)

_____ 1. I was not enrolled as a regular high-school student while taking the correspondence course.
_____ 2. I was not supervised by anyone.
_____ 3. Other reason(s): _____
_____

Name: _____
Address: _____
_____

Title: An Evaluation of Supervised Correspondence Study as a Means of Helping Relieve the Teacher Shortage (USOE/221)

Investigator: Blake S. Root

Institution: George Washington University, Washington, D. C.

Starting Date: June 1957

Closing Date: March 1958

PROBLEM

To investigate the use of supervised correspondence study to relieve teacher shortage.

MAJOR OBJECTIVES

1. To find out how satisfactory supervised correspondence study is as a method of instruction;

2. To identify administrative problems and desirable solutions connected with the use of this method;

3. To find out how satisfactory supervised correspondence study is from the student's viewpoint; and

4. To obtain whatever evidence may be available on the success in college courses of students who have studied the subject by correspondence on the high school level.

PROCEDURES AND DESIGN

Several hundred students who have been enrolled in supervised correspondence school courses will provide information about whether or not they completed their courses, how well they liked this method of study, what subsequent success they met with in the field studied, and what problems they encountered in studying by correspondence. In addition, the principals of numerous high schools in which supervised correspondence study is being offered will be asked to supply information about why they are offering this type of study, how widely it is being used by students, what administrative problems are involved, and what evidence they have regarding the educational merit of this method of learning.